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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------|------------------------|
| 10/509,164 | 09/27/2004 | Derek W. Mackney | 3076R-01 | 5093 |
| 7590 Lubrizol Corporation Patent Administrator Mail Drop 022B 29400 Lakeland Boulevard Wickliffe, OH 44092-2298 | | | EXAMINER MCAVOY, ELLEN M | |
| | | | ART UNIT 1797 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/509,164

Applicant(s)

MACKNEY ET AL.

Examiner

Ellen M. McAvoy

Art Unit

1797

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5 and 7-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 7-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submissions, amendments to the claims and remarks, filed on 17 October 2008, have been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forde et al (6,136,051) in combination with Pudelski et al (6,412,468).

Applicants' arguments filed 17 October 2008 have been fully considered but they are not persuasive. As previously set forth, Forde et al ["Forde"] disclose a fuel composition that has good control of combustion chamber deposits which comprises a major portion of hydrocarbons boiling in the gasoline range; at least 1200 ppm by weight of a detergent selected from hydrocarbyl-substituted amine or polyamine; and at least 2400 ppm by weight of a mineral carrier fluid. The hydrocarbyl-substituted amines and polyamines contain a hydrocarbyl group having an average molecular weight in the range of from 450 to 10,000, preferably 1,000 to

5,000, and includes polyisobutylene. See column 2, lines 20-59. Forde allows for the addition of other additives to the gasoline composition including other detergents and dispersants including succinimides. See column 5, lines 40-48. The examiner is of the position that the detergent additive of Forde meets the limitations of the detergent additive of the claims when it is component (A), a succinimide or component (B), hydrocarbyl-substituted amines. Applicants' open-ended claim language "comprising" allows for the addition of other additives to the composition such as the mineral carrier fluid of Forde. Applicants' invention differs in dependent claims 11-14 by requiring that the engine have an exhaust treatment device; that the lubricating oil circulated within the engine have one of the properties of low phosphorus, low sulfur and low sulfated ash content; and that the fuel in the fuel composition have a sulfur content below about 80 ppm by weight. However, as evidenced by Pudelski et al ["Pudelski"], such characteristics are well-known in the art. Pudelski teaches that in a method of operating an internal combustion engine equipped with exhaust gas aftertreatment devices, a normally liquid or gaseous fuel having a low sulfur content is known to function effectively with a low-phosphorus or phosphorus-free lubricating oil composition which is used to lubricate the engine. See columns 1-2. Gasoline fuels with a sulfur content of less than about 10 ppm are taught in column 6, lines 32-45. Pudelski also teaches that operating the internal combustion engine provides an increase in time intervals required between oil changes which meets the limitations of dependent claims 13 and 14. Thus having the prior art references before the inventors at the time the invention was made it would have been obvious to have followed the teachings of the art and to have used the gasoline fuel composition of Forde with the low phosphorus content lubricating

oil composition and low sulfur gasoline fuel combination of Pudelski if the known imparted properties were so desired.

In response, applicants have amended claim 1 to include the limitation that the lubricating oil used in the internal combustion engine has at least one of the properties of phosphorus content below 0.1 % by weight, sulfur content below 0.5% by weight or a sulfated ash content below 1.5% by weight. Applicants argue that the detergent composition in the fuel also improves the performance of the lubricating oil in the engine due to a continuous transfer of small amounts of the detergent composition from the fuel to the oil during the operation of the engine and that this is neither taught or suggested in the applied prior art. This is not deemed to be persuasive of patentability because the combination of familiar elements according to known methods is likely obvious when the combination does no more than yield predictable results. *KSR*, 127 S.Ct. at 1739, 82 USPQ2d at 1395. And that all that is required for obviousness under 35 U.S.C. §103 is a reasonable expectation of success. *O'Farrell*, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). The fact that applicants have discovered that a small amount (relative term) of fuel containing a conventional detergent additive enters the engine crankcase does not result in the patentability of a known method of operating an internal combustion engine. The examiner maintains the position that it would have been obvious to have followed the teachings of the art and to have used the gasoline fuel composition of Forde with the low phosphorus content lubricating oil composition and low sulfur gasoline fuel combination of Pudelski if the known imparted properties were so desired.

Claim Rejections - 35 USC § 103

Claims 1, 3, 5 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malfer et al (6,800,103) in combination with Forde et al (6,136,051) and Pace et al [WO 02/18521 A2].

Applicants' arguments filed 17 October 2008 have been fully considered but they are not persuasive. As previously set forth, Malfer et al ["Malfer"] discloses a detergent/dispersant additive for use in spark-ignition fuels such as gasoline comprising Mannich condensation products that are effective in controlling intake valve deposits and minimizing valve sticking in internal combustion engines. The Mannich condensation products are formed by the reaction of (i) at least one hydrocarbyl-substituted hydroxyaromatic compound, (ii) at least one secondary amine, and (iii) at least one aldehyde. See columns 1-2. Malfer allows for the addition of other additives to the gasoline composition including antioxidants, and other detergents/dispersants. See column 8, line 66 to column 9, line 12. The examiner is of the position that the Mannich products of Malfer meet the limitations of the detergent additive of the claims when it is component (C), a Mannich reaction product of a hydrocarbyl-substituted hydroxy-containing aromatic compound, an aldehyde and an amine. Applicants' invention differs by requiring the addition of component (A) and/or (B) to the fuel composition. However, Malfer allows for the addition of conventional additives to the fuel composition including ancillary detergent/dispersant additives. See column 8, line 66 to column 9, line 12. Forde et al ["Forde"] is relied on as outlined above to teach the addition of detergent additives which meet the limitations of components (A) and (B) to fuel compositions. Applicants' invention differs in dependent claims 11-14 by requiring that the engine have an exhaust treatment device; that the

lubricating oil circulated within the engine have one of the properties of low phosphorus, low sulfur and low sulfated ash content; and that the fuel in the fuel composition have a sulfur content below about 80 ppm by weight. However, as evidenced by Pace et al ["Pace"], such characteristics are well-known in the art. Pace discloses using a low phosphorus content lubricating oil composition in combination with a low sulfur gasoline fuel in order to reduce exhaust emissions without adversely affecting fuel economy. Pace teaches that the lubricating oil composition has a phosphorus content of no more than 0.05% by weight, and that the gasoline fuel has a sulfur content of less than 10 ppm by weight. See pages 1-2. Thus having the prior art references before the inventors at the time the invention was made it would have been obvious to have followed the teachings of the art and to have used the gasoline fuel composition of Malfer in combination with Forde with the low phosphorus content lubricating oil composition and low sulfur gasoline fuel combination of Pace in order to reduce exhaust emissions without adversely affecting fuel economy.

In response, applicants have amended claim 1 to include the limitation that the lubricating oil used in the internal combustion engine has at least one of the properties of phosphorus content below 0.1 % by weight, sulfur content below 0.5% by weight or a sulfated ash content below 1.5% by weight. Applicants argue that the detergent composition in the fuel also improves the performance of the lubricating oil in the engine due to a continuous transfer of small amounts of the detergent composition from the fuel to the oil during the operation of the engine and that this is neither taught or suggested in the applied prior art. This is not deemed to be persuasive of patentability because the combination of familiar elements according to known methods is likely obvious when the combination does no more than yield predictable results.

KSR, 127 S.Ct. at 1739, 82 USPQ2d at 1395. And that all that is required for obviousness under 35 U.S.C. §103 is a reasonable expectation of success. *O'Farrell*, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). The fact that applicants have discovered that a small amount (relative term) of fuel containing a conventional detergent additive enters the engine crankcase does not result in the patentability of a known method of operating an internal combustion engine. The examiner maintains the position that it would have been obvious to have followed the teachings of the art and to have used the gasoline fuel composition of Malfer in combination with Forde with the low phosphorus content lubricating oil composition and low sulfur gasoline fuel combination of Pace if the known imparted properties were so desired.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ellen M McAvoy/

Ellen M McAvoy
Primary Examiner
Art Unit 1797

EMcAvoy
December 10, 2008